

WHAT IS CLAIMED IS:

1. A production process of a gas turbine, comprising the steps of:

previously setting a principal part of a gas turbine including a multistage compressor and a multistage turbine, said principal part capable of being adapted in common for various cycles; and

setting, based on said previously set principal part, the number of stages of said compressor and the number of stages of said turbine, which can provide conditions suitable for a desired cycle.

2. A production process of a gas turbine according to Claim 1, wherein when reducing the number of stages of said compressor or the number of stages of said turbine from the previously set number of stages, a member having an outer periphery, which forms an inner peripheral wall of an annular flow passage of said compressor or said turbine, is attached to each of stages omitted to reduce the number of stages, and said compressor and said turbine each having the set number of stages and included in said principal part are combined with each other to construct said gas turbine.

3. A production process of a gas turbine according to Claim 1, wherein the number of stages of said compressor, the number of stages of said turbine, and a combination of said compressor and said turbine are set based on pressure

ratios of said compressor and said turbine which provide a turbine outlet temperature required for the desired cycle, and on a compressor inlet area which provides a required turbine flow rate and a required compressor flow rate.

4. A gas turbine comprising a multistage compressor and a multistage turbine,

wherein a principal part of said compressor and said turbine is previously designed so as to be capable of being adapted in common for various cycles, and said compressor and said turbine are each constructed by combining a stage portion formed in the number of stages suitable for a desired cycle with a disk-shaped member having an outer periphery, which forms a part of an inner peripheral wall of an annular flow passage of said compressor or said turbine.

5. A gas turbine according to Claim 4, wherein said member is attached to each of said stage portion omitted to reduce the number of stages previously set for said compressor or said turbine.

6. A gas turbine according to Claim 4, wherein said member is a dummy disk which has an outer periphery formed smooth and is capable of being inserted in a disk mount position of said compressor or said turbine.

7. A production process of a gas turbine, comprising a compressor for compressing atmospheric air and generating

compressed air, a combustor for mixing and combusting the compressed air and fuel and generating combustion gas, and a turbine driven with the combustion gas, said gas turbine being constructed of a plurality of design elements necessary in designing said compressor, said combustor and said turbine, the process comprising the steps of:

designing common elements, which are used in common in various power generation cycles, from among the design elements of said gas turbine; and

designing said gas turbine such that the common elements are adapted for a power generation cycle of the gas turbine to be produced.

8. A production process of a gas turbine comprising a compressor for compressing atmospheric air and generating compressed air, a combustor for mixing and combusting the compressed air and fuel and generating combustion gas, and a turbine driven with the combustion gas, said gas turbine being constructed of a plurality of design elements necessary in designing said compressor, said combustor and said turbine,

wherein the design elements of said gas turbine have parameters necessary in designing the design elements, and

the process comprises a first step of setting values of the parameters of common elements, which are used in common in various power generation cycles, from among the design elements of said gas turbine, and designing the common elements based on the set values of the parameters, and

a second step of designing said gas turbine such that the designed common elements are adapted for a power generation cycle of the gas turbine to be produced, thereby producing said gas turbine.

9. A production process of a gas turbine comprising a compressor for compressing atmospheric air and generating compressed air, a combustor for mixing and combusting the compressed air and fuel and generating combustion gas, and a turbine driven with the combustion gas, said gas turbine being constructed of a plurality of design elements necessary in designing said compressor, said combustor and said turbine,

wherein the design elements of said gas turbine have parameters necessary in designing the design elements, and

the process comprises a first step of setting values of the parameters of common elements, which are used in common in various power generation cycles, from among the design elements of said gas turbine, and designing the common elements based on the set values of the parameters,

a second step of designing said gas turbine such that the designed common elements are adapted for a desired power generation cycle, and

a third step of modifying design of the designed gas turbine such that the common elements are adapted for a power generation cycle different from the desired power generation cycle, thereby producing said gas turbine.

10. A gas turbine comprising a compressor for compressing atmospheric air and producing compressed air, a combustor for mixing and combusting the compressed air and fuel and producing combustion gas, and a turbine driven with the combustion gas, said gas turbine being constructed of a plurality of design elements necessary in designing said compressor, said combustor and said turbine,

wherein the design elements of said gas turbine include common elements used in common in various power generation cycles, and when designing said gas turbine, the common elements are adapted for a power generation cycle of the gas turbine to be produced.

11. A gas turbine comprising a compressor for compressing atmospheric air and producing compressed air, a combustor for mixing and combusting the compressed air and fuel and producing combustion gas, and a turbine driven with the combustion gas, said gas turbine including common elements which are designed by setting at least one of a combustion temperature and a pressure ratio,

wherein said gas turbine have common elements for which values of the combustion temperature and the pressure ratio in a power generation cycle of the gas turbine to be produced differ from a value of at least one of the combustion temperature and the pressure ratio utilized in design of the common elements.

12. A process of modifying a gas turbine comprising a

compressor for compressing atmospheric air and producing compressed air, a combustor for mixing and combusting the compressed air and fuel and producing combustion gas, and a turbine driven with the combustion gas, said gas turbine including common elements which are designed by setting at least one of a combustion temperature and a pressure ratio, said gas turbine being designed and produced such that the designed common elements are adapted for a power generation cycle of the gas turbine to be produced,

wherein said gas turbine is modified in design such that the common elements are adapted for a power generation cycle of the gas turbine after modification.

13. A process of modifying a gas turbine comprising a compressor for compressing atmospheric air and producing compressed air, a combustor for mixing and combusting the compressed air and fuel and producing combustion gas, and a turbine driven with the combustion gas, said gas turbine including common elements which are designed by setting at least one of a combustion temperature and a pressure ratio, said gas turbine being designed and produced such that the designed common elements are adapted for a power generation cycle of the gas turbine to be produced,

wherein values of the combustion temperature and the pressure ratio in a power generation cycle of the gas turbine after modification differ from a value of at least one of the combustion temperature and the pressure ratio utilized in design of the common elements.